

# **Connecticut Diesel Emission Control Technologies Forum**

**August 17, 2005**

**Connecticut Clean Cities**

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# **Clean Cities U.S. Dept of Energy Program**

**88 Clean Cities Nationwide**

## **Goals:**

- **Improve Air Quality**
- **Displace Petroleum  
(energy independence)**

# **Goals achieved through the use of**

- ☐ **Alternative Fuel Vehicles**
- ☐ **Fuel Blends**
- ☐ **Fuel Economy**
- ☐ **Hybrid Vehicles**
- ☐ **Idle Reduction**

<b>Fuel/Project</b>	<b>Vehicle Class</b>	<b>Norwich</b>	<b>Capital</b>	<b>New Haven</b>	<b>South-west</b>
<b>CNG</b>	<b>Heavy Duty</b>	<b>8</b>			
	<b>Med Duty</b>	<b>1</b>			
	<b>Light Duty</b>	<b>24</b>	<b>24</b>	<b>1</b>	<b>30</b>
	<b>other</b>		<b>3</b>		
<b>Gasoline - Electric Hybrid</b>	<b>Light Duty</b>	<b>2</b>	<b>6</b>	<b>4</b>	<b>1</b>
<b>Flexfuel E-85 / Gasoline</b>	<b>Sedans</b>		<b>50</b>		
<b>Electric</b>	<b>Light Duty</b>	<b>1</b>			
	<b>Heavy Duty</b>			<b>4</b>	
<b>Bifuel – Gasoline-CNG</b>	<b>Sedans</b>	<b>7</b>			<b>5</b>
<b>Major Projects</b>	<b>Various</b>	<b>Adv Trans System</b>	<b>City of Htfd Fleet AFVs</b>	<b>Fuel Cell Bus Proj</b>	<b>Multi Town</b>

# HEAVY DUTY ON-ROAD VEHICLES

Emissions & Cost Manufacturer	Reductions % <sup>1</sup>						Installed Cost per unit	Fuel Savings
	PM	CO	NOx	HC	CO2	SO2		
FL 80 HD Truck CNG 2004 CNG	90	90	50	n/a	30	n/a	\$43,620	90%-95%
FL 60 HD Crew Truck 2004 CNG	90	90	50	n/a	30	n/a	\$43,620	90%-95%
Sterling Bucket Truck FL 80 2002 CNG	90	90	50	n/a	30	n/a	\$46,500	90%-95%
Sterling Sewer Jet Truck FL 80 2003 CNG	90	90	50	n/a	30	n/a	\$50,900	90%-95%
Ford 16 Psngr Shuttle Bus 2004 CNG	90	90	50	n/a	30	n/a	\$18,250	90%-95%
Ebus Trolley Replicas 2002	Note 2					→	\$125K	Note 3

1 - [www.eere.energy.gov/afdc/altfuel/gas\\_benefits.html](http://www.eere.energy.gov/afdc/altfuel/gas_benefits.html)

2 - No tailpipe emissions - emissions occur at power plant

3 -EV efficiency approx 2.7X greater than ICE System (NESEA)

## SCHOOL BUS INITIATIVES

Item	Emission Reductions %						Installed Cost per unit	Fuel Savings
	PM	CO	NOx	HC	CO2	SO2		
<b>Diesel Particulate Filter &amp; ULSD <sup>4</sup></b>	<b>60</b>	<b>60</b>	<b>n/a</b>	<b>60</b>	<b>n/a</b>	<b>n/a</b>	<b>\$4,500</b>	<b>none</b>
<b>Diesel Oxidation Catalyst &amp; ULSD <sup>4</sup></b>	<b>20</b>	<b>40</b>	<b>n/a</b>	<b>50</b>	<b>n/a</b>	<b>n/a</b>	<b>\$1,000</b>	<b>none</b>
<b>John Deere 8.1L CNG engines<sup>5</sup></b>	<b>90</b>	<b>90</b>	<b>50</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>\$39,950</b>	<b>90%-95%</b>

4 [www.epa.gov/cgi-bin/epaprintonly.cgi](http://www.epa.gov/cgi-bin/epaprintonly.cgi)

5 [www.eere.energy.gov/afdc/altfuel/gas\\_benefits.html](http://www.eere.energy.gov/afdc/altfuel/gas_benefits.html)

# **Major Connecticut Clean Cities Projects**

## **Norwich – Advanced Transportation System**

- **Buses: Biodiesel, CNG, Hythane, H<sub>2</sub>ICE, H<sub>2</sub> FC**
- **H2 Infrastructure: Electrolysis (Avalence)**  
**Reformation** { **a. CNG and/or**  
**b. Land Fill Gas**

## **Greater New Haven - FC Bus Design / Manufacture**

**New concept Fuel Cell Bus will be designed – 2 prototypes to be manufactured.**

## **Southwest Connecticut Area**

**New Public access fuel station - major emphasis on encouraging Heavy Duty Trash trucks**

# **Connecticut Clean Cities Connections** **Quarterly Newsletter**

**To get on email list send request to**  
**[mtucchio@sbcglobal.net](mailto:mtucchio@sbcglobal.net)**





Electric Trolley – Downtown New Haven  
Winter 2003-2004 Snow Storm



Opening of Norwich CNG Fueling Station  
Oct 25, 2004

# **Connecticut Department of Transportation Biodiesel Initiatives**

**Richard Baron**